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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,177	11/02/2001	Bruce J. Sabacky	10225/21 (A18)	1846

7590 09/29/2003

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EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 09/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,177

Applicant(s)

SABACKY ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 12, step c., "the hydrolyzed product" lacks antecedent basis. Examiner suggests --the intermediate-- or --the solution--.

Claims 9 and 18, "the hydrolysis process" lacks antecedent basis.

Claim 13, line 2, "the zirconium" is unclear as to what is being referred to. Examiner suggests --zirconium oxychloride--.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-4, 7-9, 11-13, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Soumiya et al. US 4,769,351.

Regarding claims 1 and 12, Soumiya '351 discloses a process for producing zirconia powder having diameter of 10 nm (Example 1) comprising forming an aqueous zirconium oxychloride and stabilizer solution, hydrolysis, and calcining (abstract).

Regarding claims 2-3, Soumiya '351 discloses zirconium oxychloride (abstract) and yttrium chloride (see column 3, lines 23-26).

Regarding claims 4, 7-9, 13, and 16-18, Soumiya '351 discloses hydrolysis (abstract), and spray drying (see column 2, lines 55-57) and 120 degrees Celsius (Example 1), which may form agglomerates (see column 2, lines 57-65).

Regarding claims 11 and 20, Soumiya '351 discloses calcining at 1000 degrees Celsius (see Example 1).

5. Claims 1-4, 7, 9, 11-13, 16, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamling et al. US 4,065,544.

Regarding claims 1 and 12, Hamling '544 discloses a method of making zirconium oxide (see column 2, lines 5-15) comprising forming a zirconium oxychloride solution (see column 3, lines

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46-61), spray or thin-film drying the solution (see column 5, lines 42-49), and ignition with or without a flame to form non-fragile agglomerates (see column 5, lines 56-68 and column 6, lines 1-5) having a particle size of 200-1000 Angstroms (see column 8, lines 13-17).

Regarding claims 2-3, Hamling '544 discloses forming a zirconium oxychloride and yttrium chloride solution (see column 3, lines 46-61 and Example 1).

Regarding claims 4, 7, 13, and 16, Hamling '544 discloses hydrolysis of the zirconia and spray drying (see column 7, lines 41-44 and column 5, lines 42-49).

Regarding claims 9 and 18, Hamling '544 discloses non-fragile agglomerates (see column 5, lines 56-68 and column 6, lines 1-5).

Regarding claims 11 and 20, Hamling '544 discloses ignition with or without a flame to form non-fragile agglomerates at 900-1300 degrees Celsius (see column 5, lines 56-68 and column 6, lines 1-5).

Allowable Subject Matter

6. Claims 5-6, 10, 14-15, and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include

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all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: It would not have been obvious to one of ordinary skill in the art at the time the invention was made to: form hydrochloric acid and remove water during the hydrolyzing step in the process of the instant claims 5 and 14; nor form the thin film of zirconia in the form of membranes with a diameter of 1-100 microns and thickness of 30-1000 nm.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kolb et al. US 6,376,590 discloses a process for making zirconia comprising a diameter of less than 20 nm using a hydrothermal method and a crystal phase stabilizer (see abstract and Examples); Carr et al. US 5,141,634 discloses a method of making porous zirconia having a particle diameter of 0.5-500 microns (see abstract and Examples).


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 703-305-0216. The examiner can normally be reached on M-F 6:30-4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 703-308-3837. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EMJ


STEVEN BOS
PRIMARY EXAMINER
GROUP 1100